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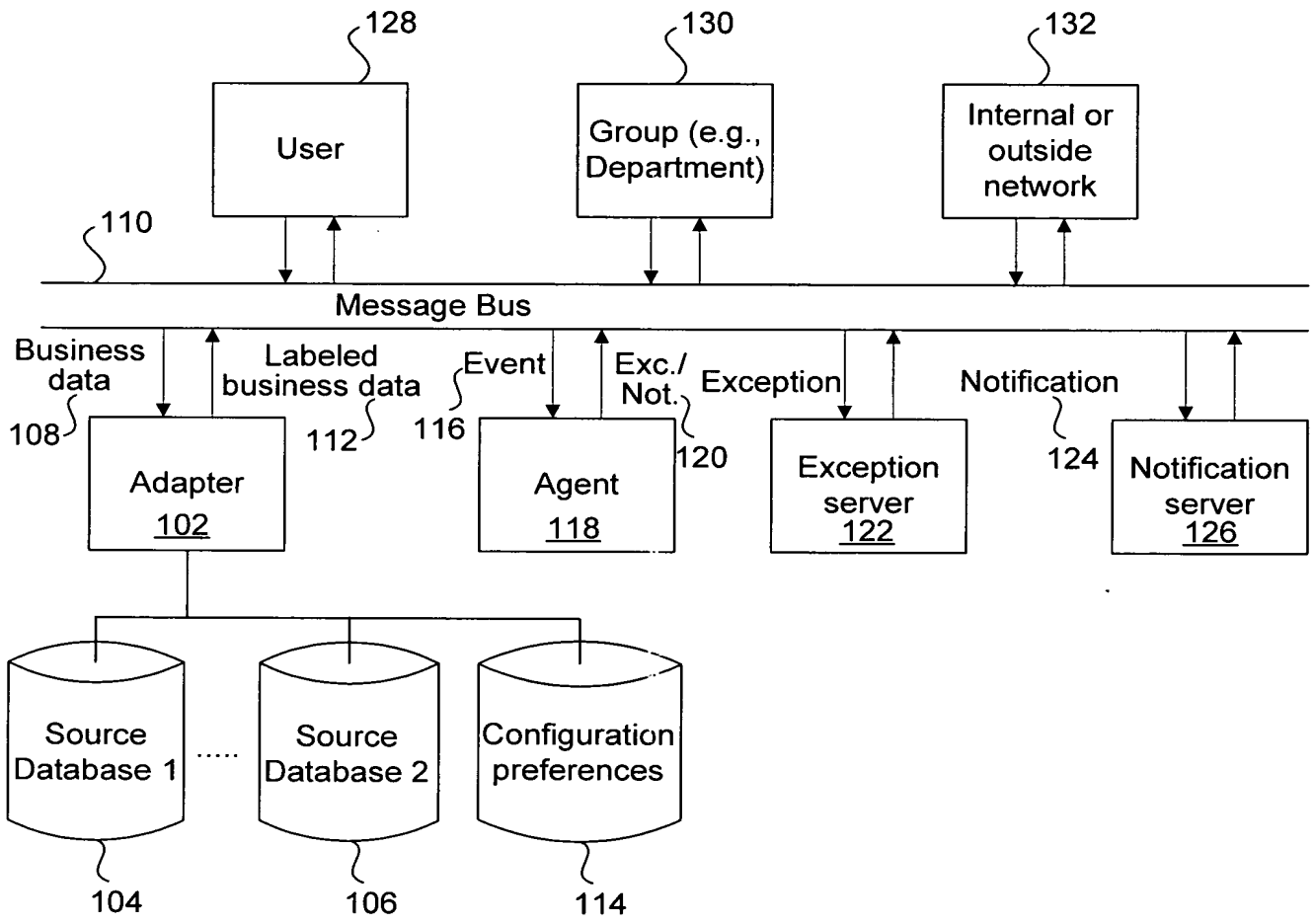


FIG. 1

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| | | |
|---|---|---|
| Customer ID | ← Business attribute #1 ~ 204 | 202 |
| Order # | ← Business attribute #2 ~ 206 | |
| Ship date ~ 214 | | |
| SKU1 | | |
| Number of orders for SKU1 | | |
| Inventory level for SKU1 | ← Business metric #1 ~ 210 | 208 |
| SKU2 | | |
| Number of orders for SKU2 | | |
| Inventory level for SKU2 | ← Business metric #2 ~ 212 | |
| . | | |
| . | | |
| . | | |

FIG. 2

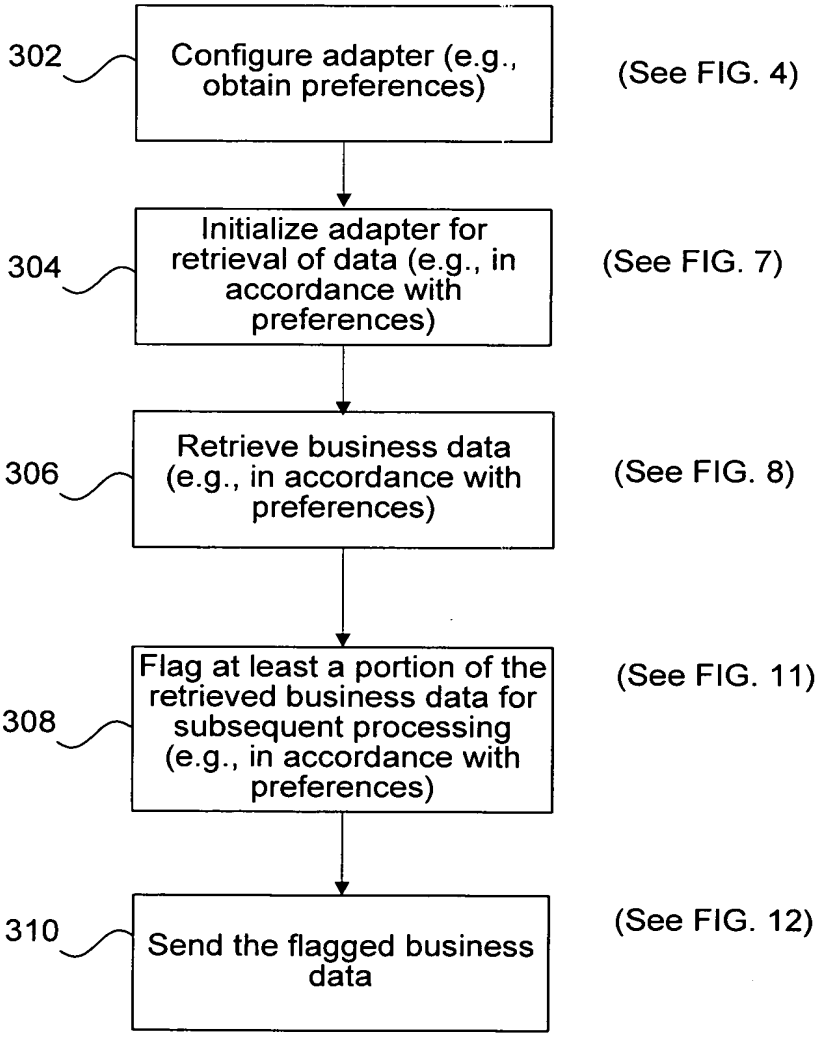


FIG. 3

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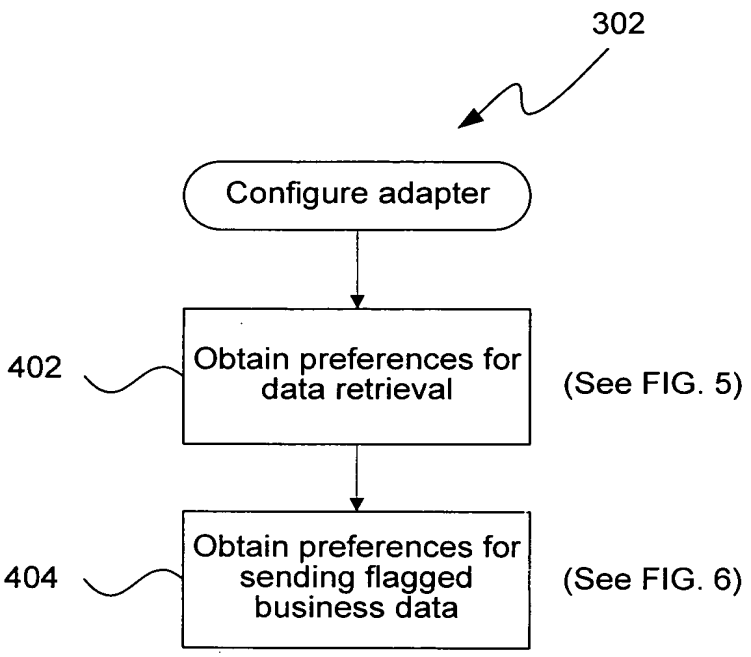


FIG. 4

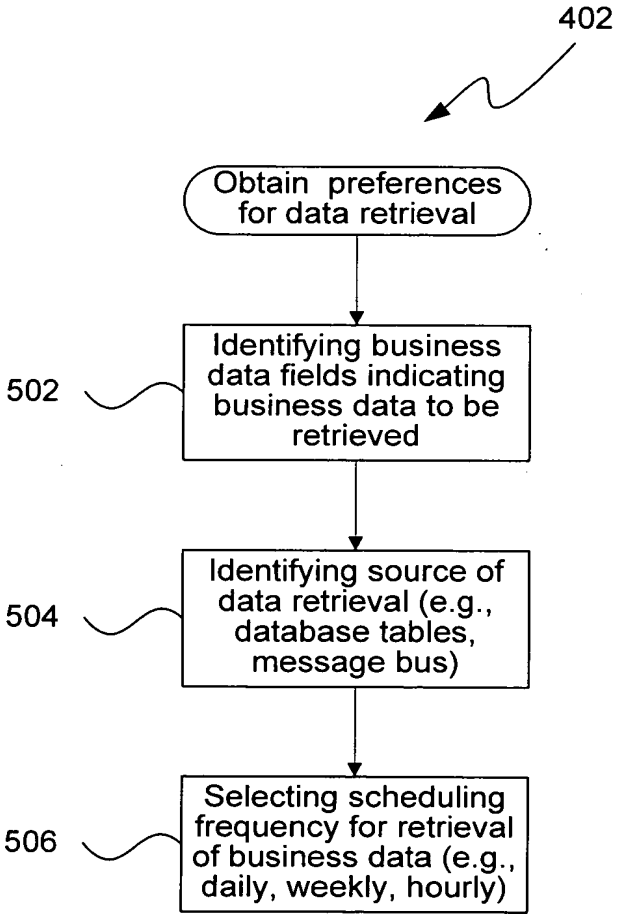


FIG. 5

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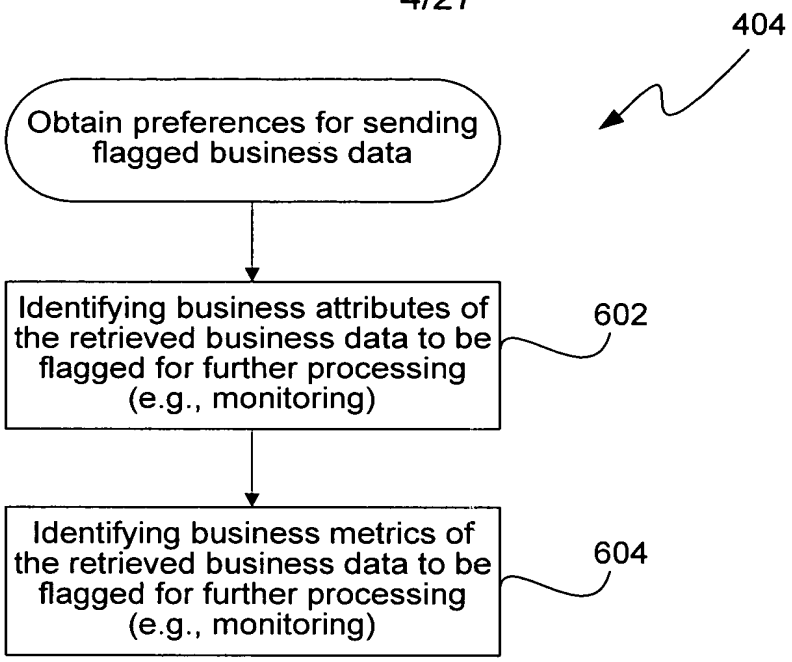


FIG. 6

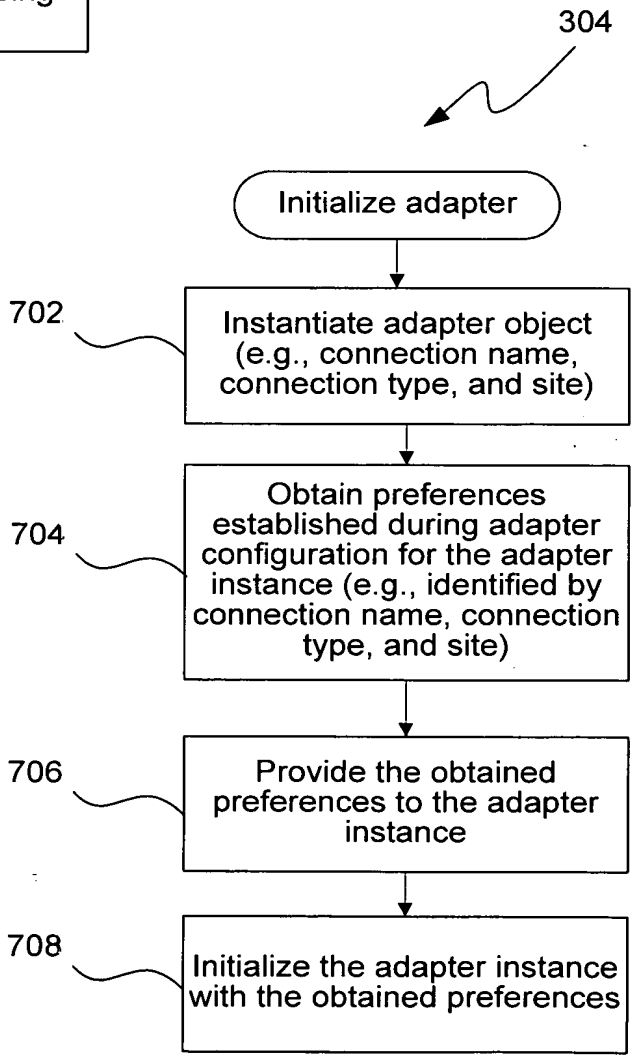


FIG. 7

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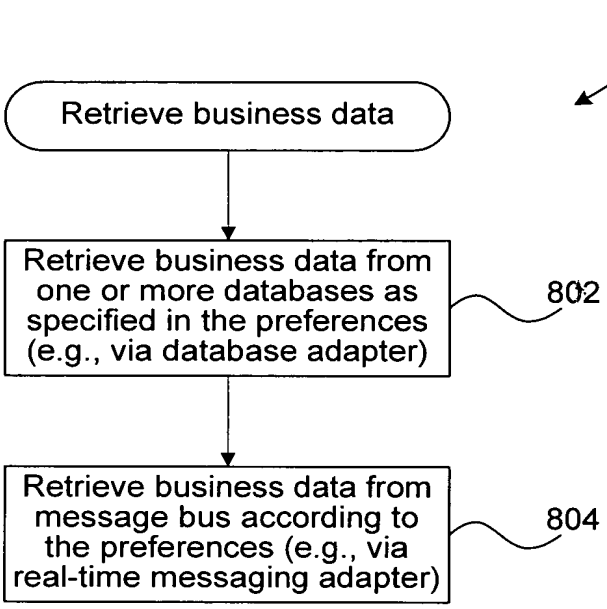


FIG. 8

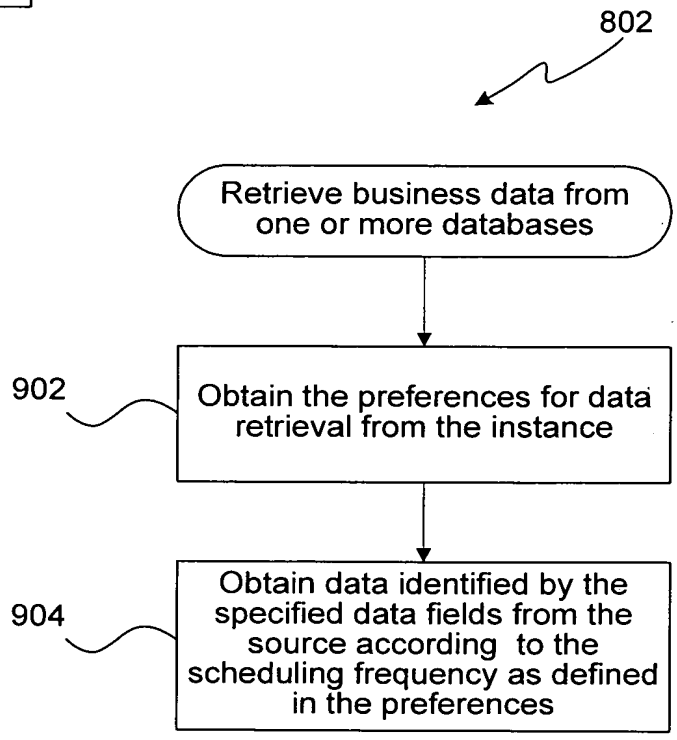


FIG. 9

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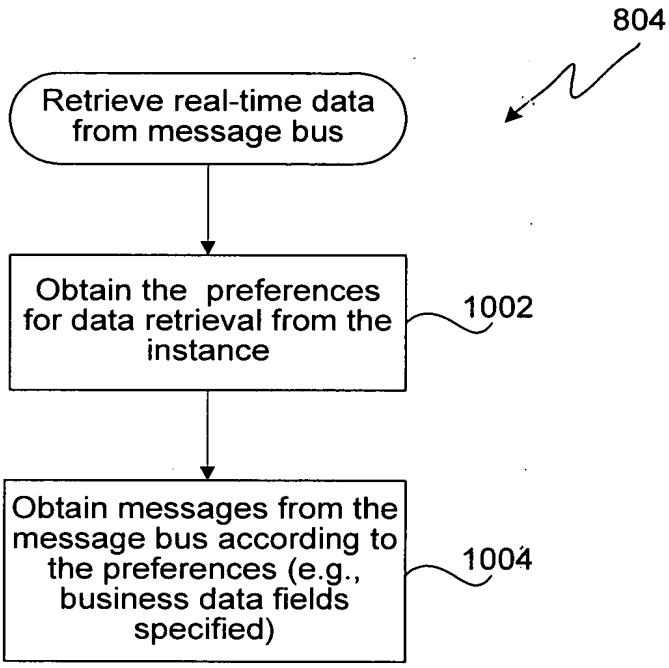


FIG. 10

1102

1106 1104

| Attribute name | Data type | Attribute value | Attribute # | Metric value flag |
|---|---|---|---|---|
| Customer | String | "SHOES_INC" | 1 | |
| Order No. | Integer | 42859 | 2 | |
| Ship date | String | "01/04/01" | | |
| SKU1 | Integer | 000195 | | |
| Number of orders – SKU1 | Integer | 4 | | |
| Inventory level for SKU1 | Integer | 97 | | 1 |
| SKU2 | Integer | 000228 | | |
| Number of orders – SKU2 | Integer | 16 | | |
| Inventory level for SKU2 | Integer | 31 | | 2 |

FIG. 11

O I P E
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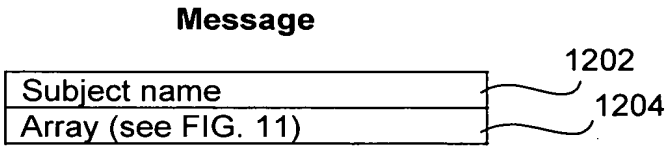


FIG. 12

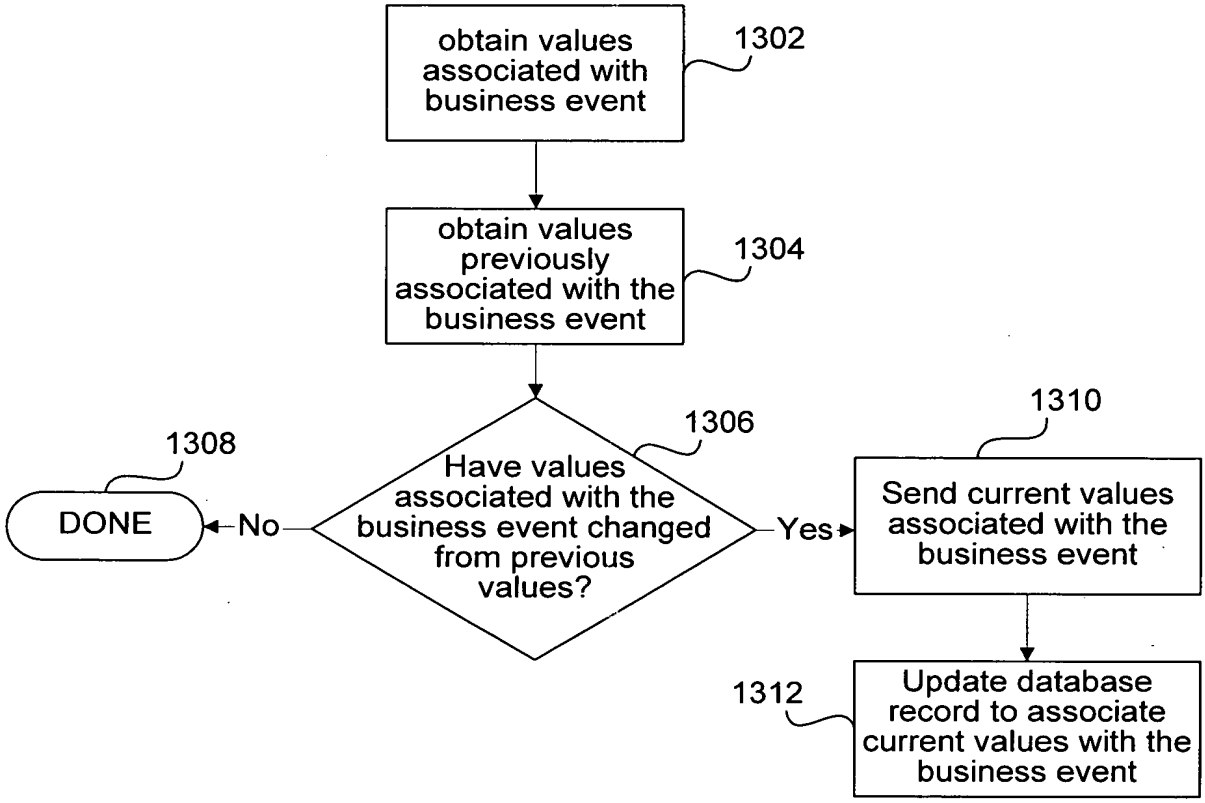


FIG. 13

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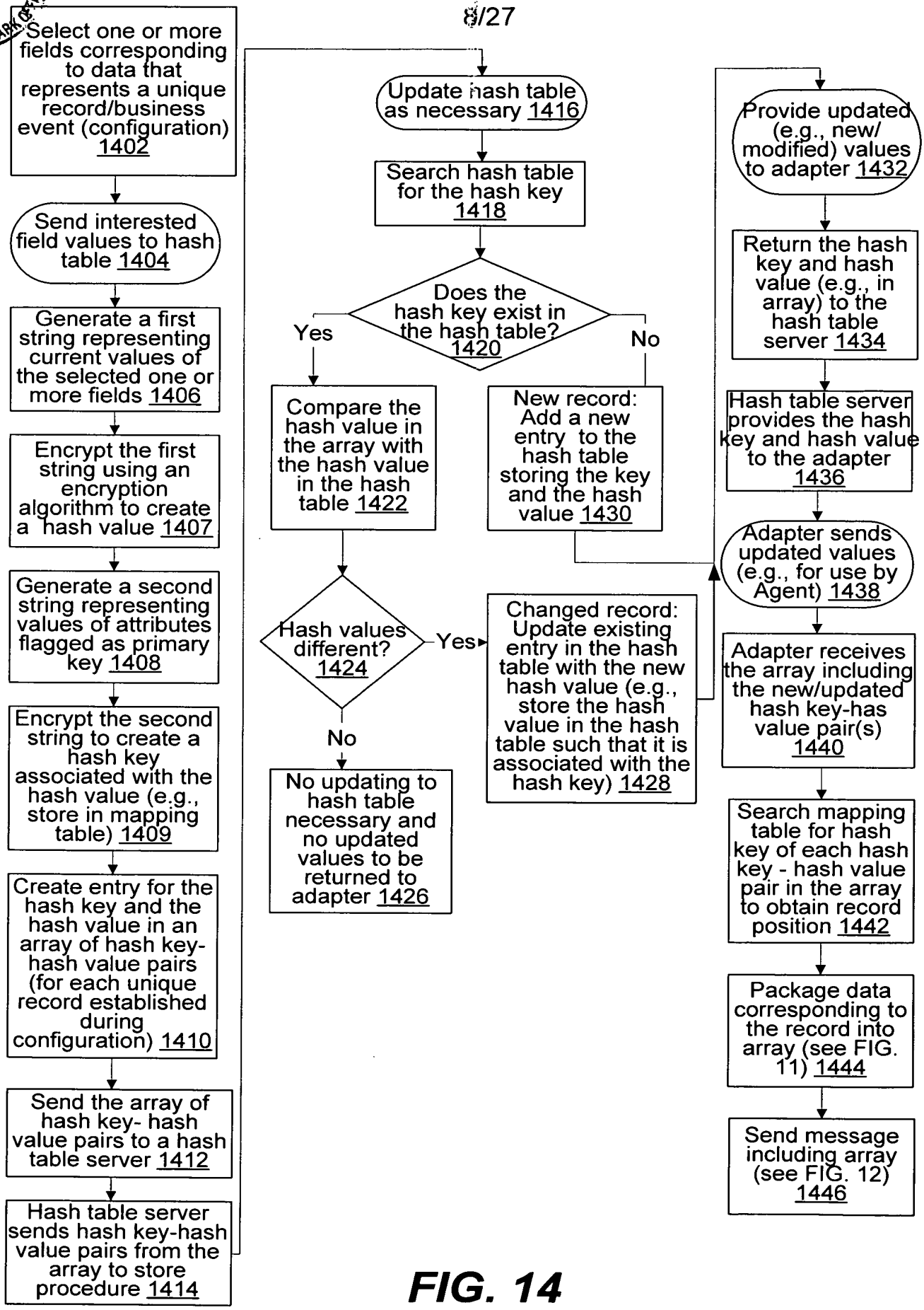


FIG. 14

O I P E
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| 1502 Hash key | 1504 Hash value |
|---|---|
| Key 1 | String 1 |
| Key 2 | String 2 |

FIG. 15

1602 Mapping Table 1604

| Hash key | Original record position (e.g., pointer) |
|---|---|
| | |

FIG. 16

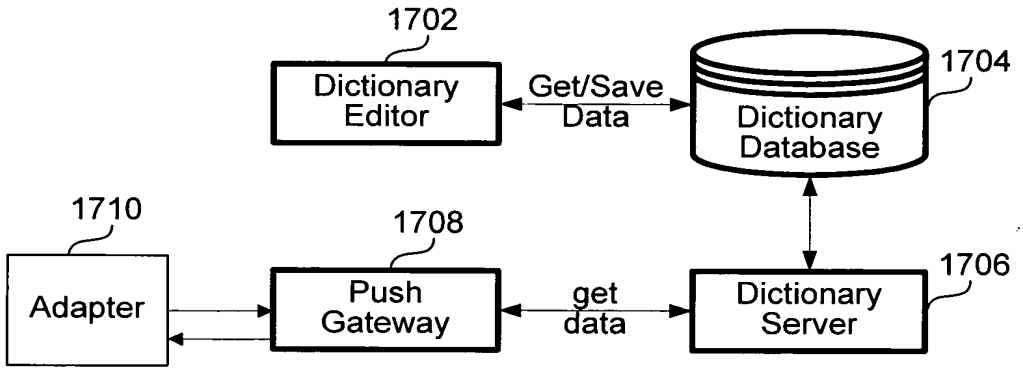


FIG. 17

O I P E
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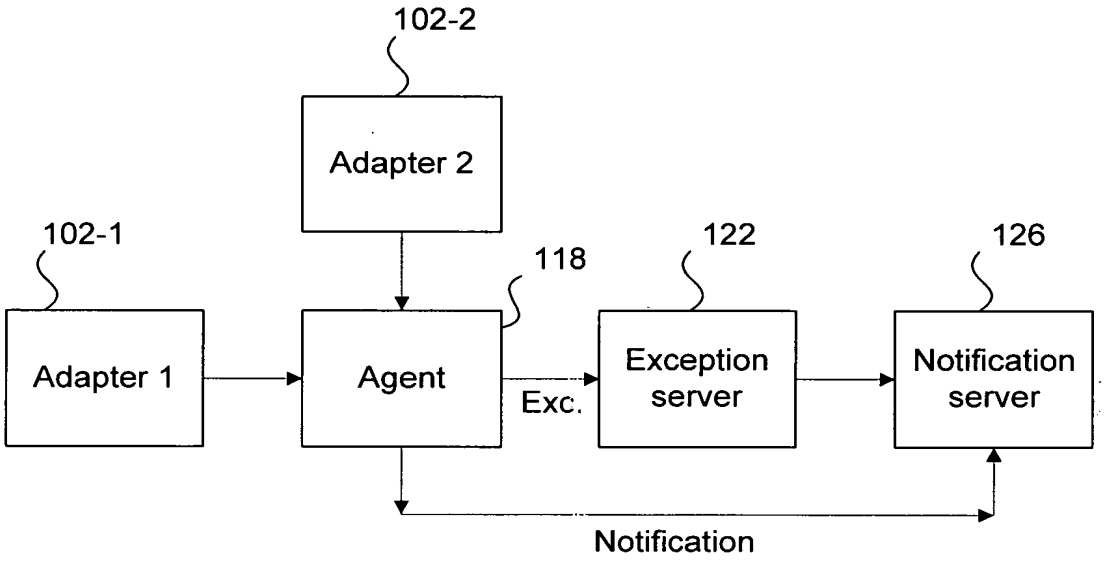


*FIG. 18*

OIPE JC42
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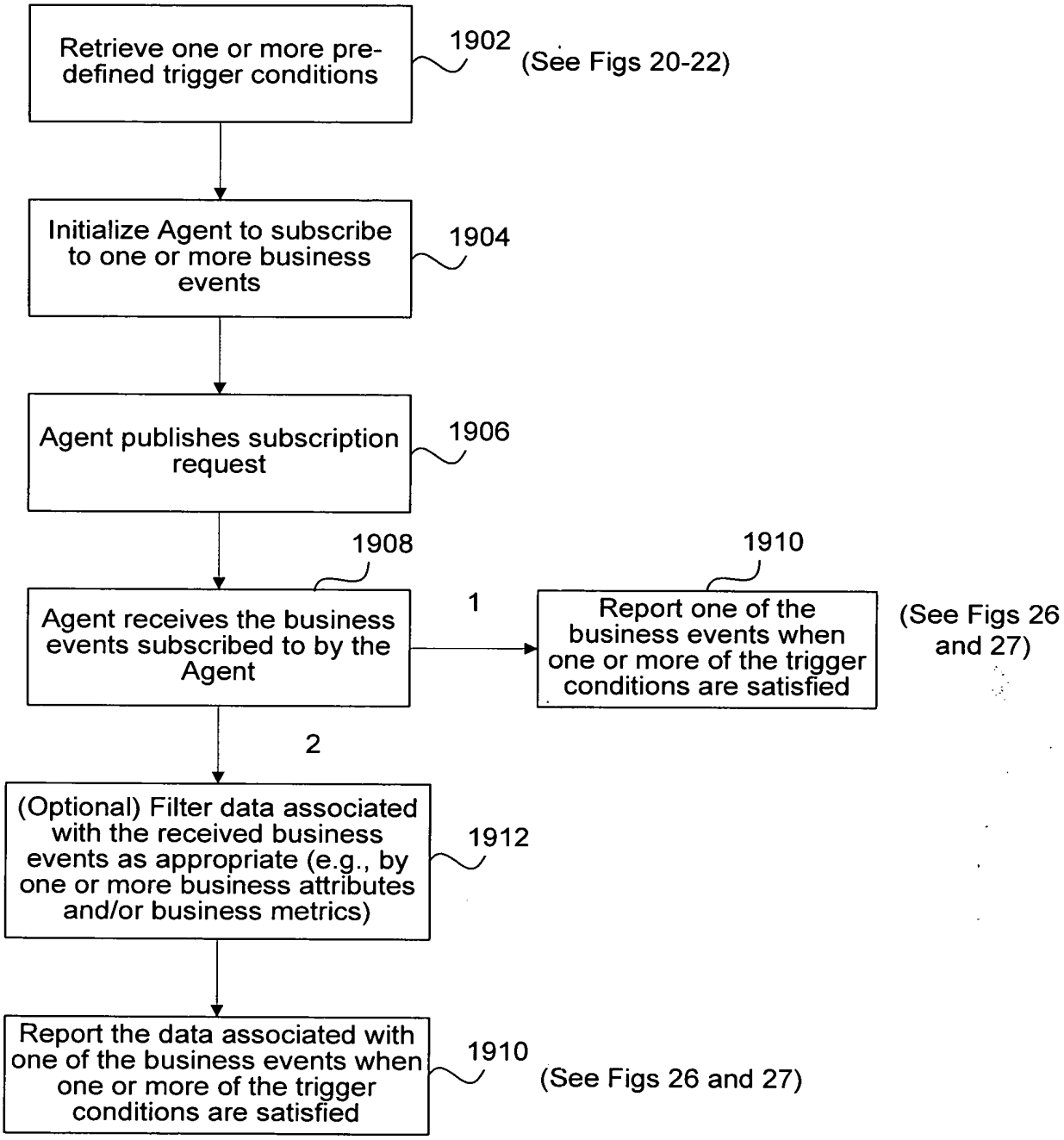


FIG. 19

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OIPE

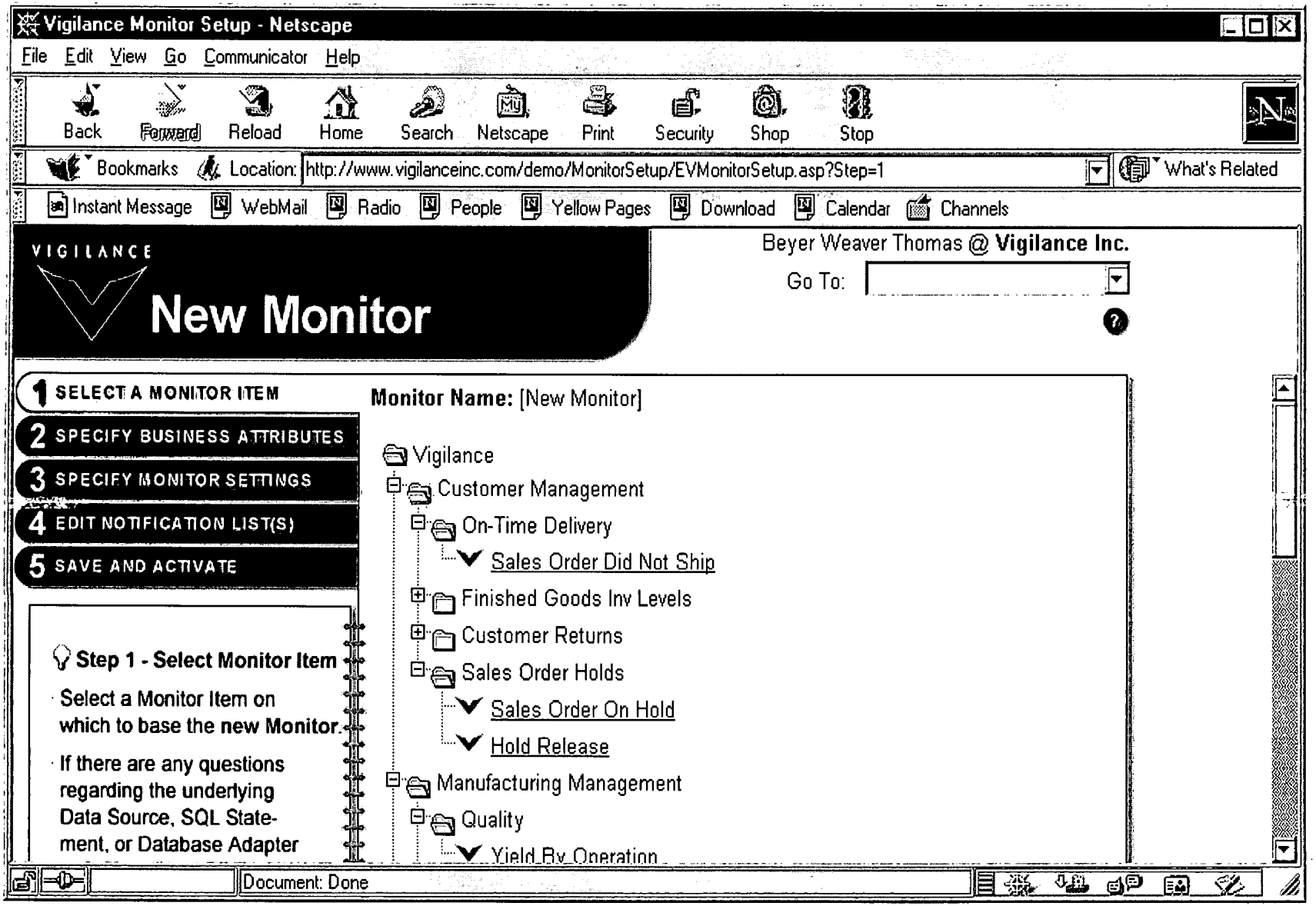


FIG. 20

PATENT & TRADEMARK OFFICE
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O I P E

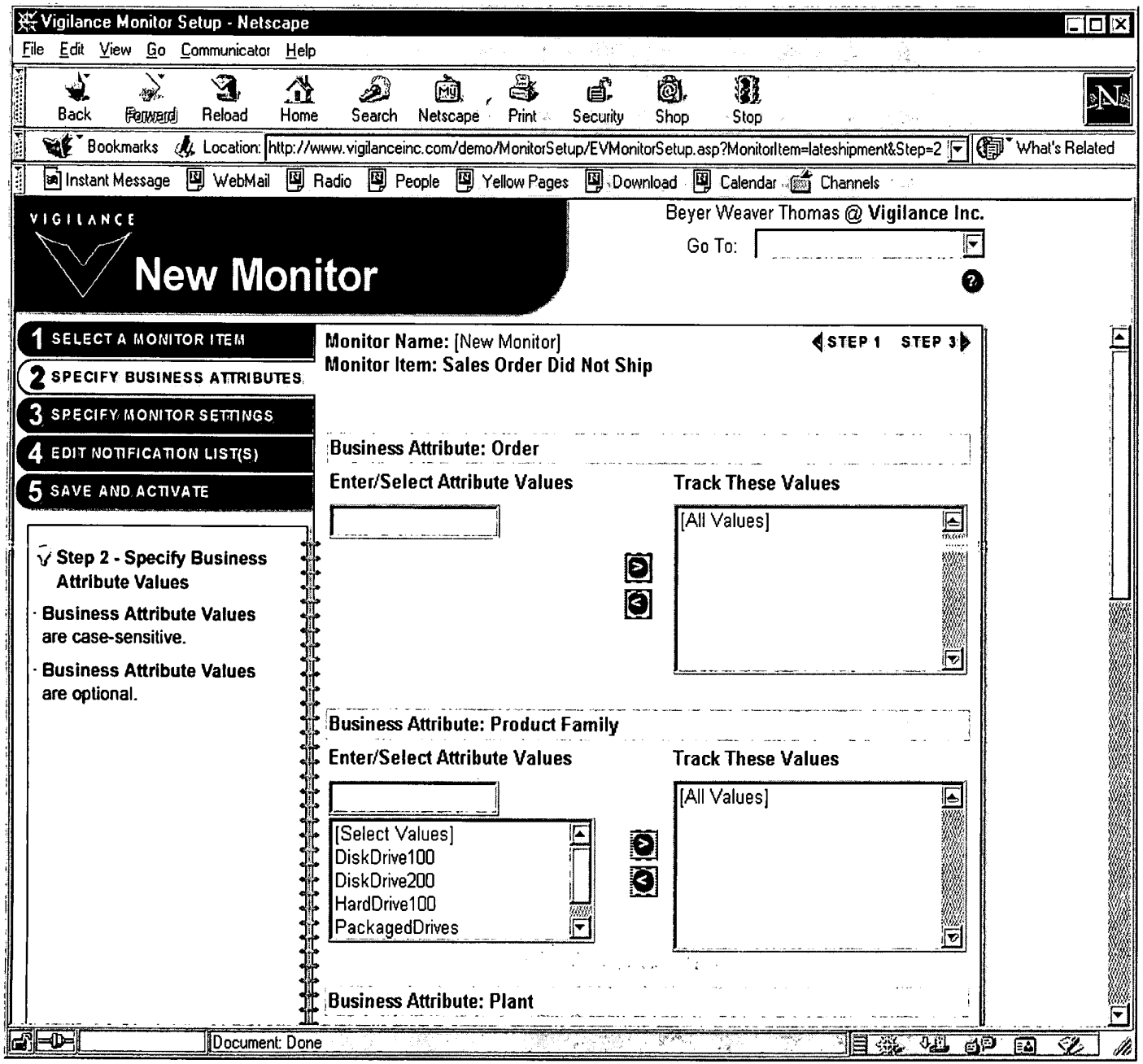


FIG. 21

PATENT & TRADEMARK OFFICE
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OIPE

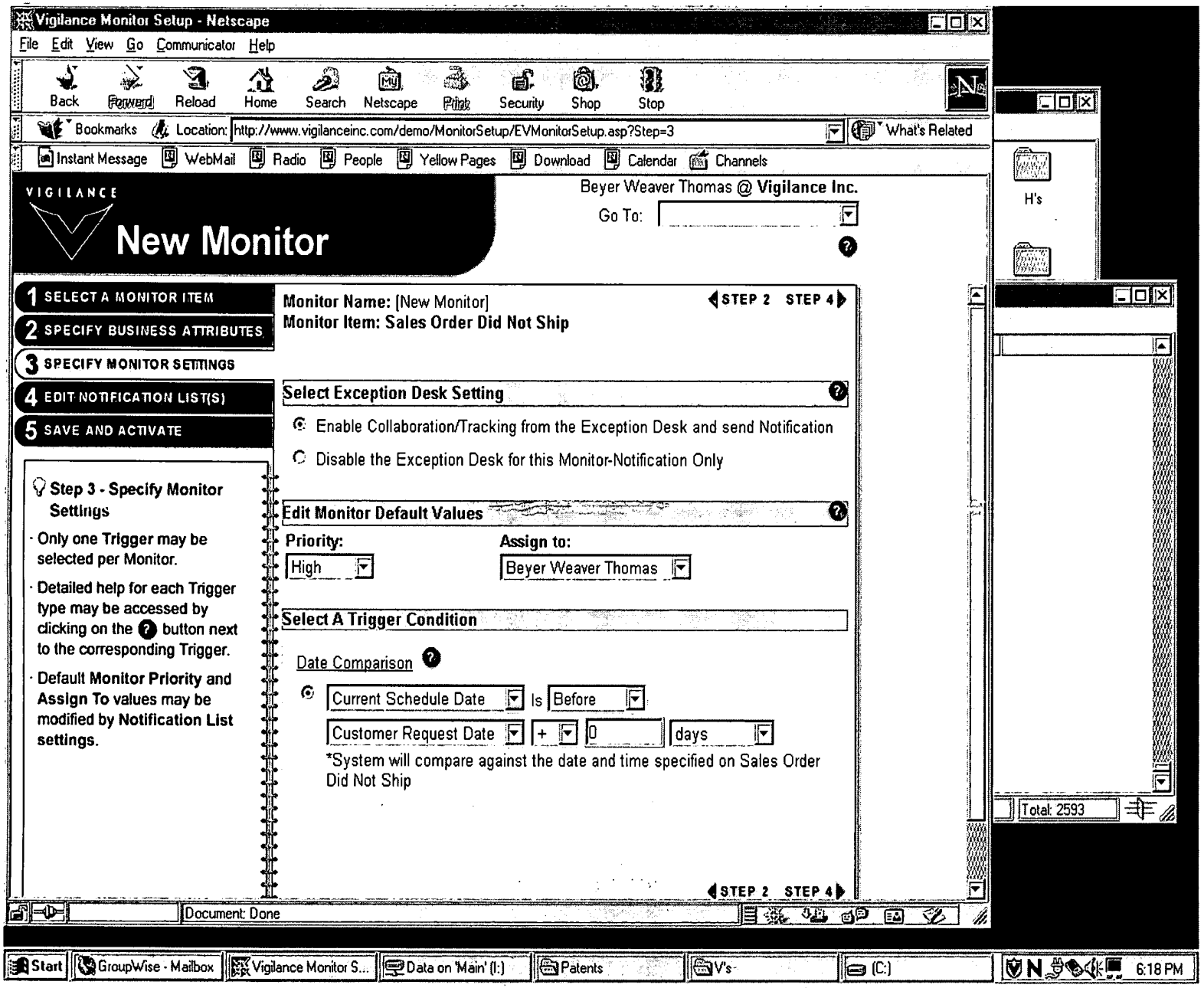


FIG. 22

PATENT & TRADEMARK OFFICE
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OIPE
JC42

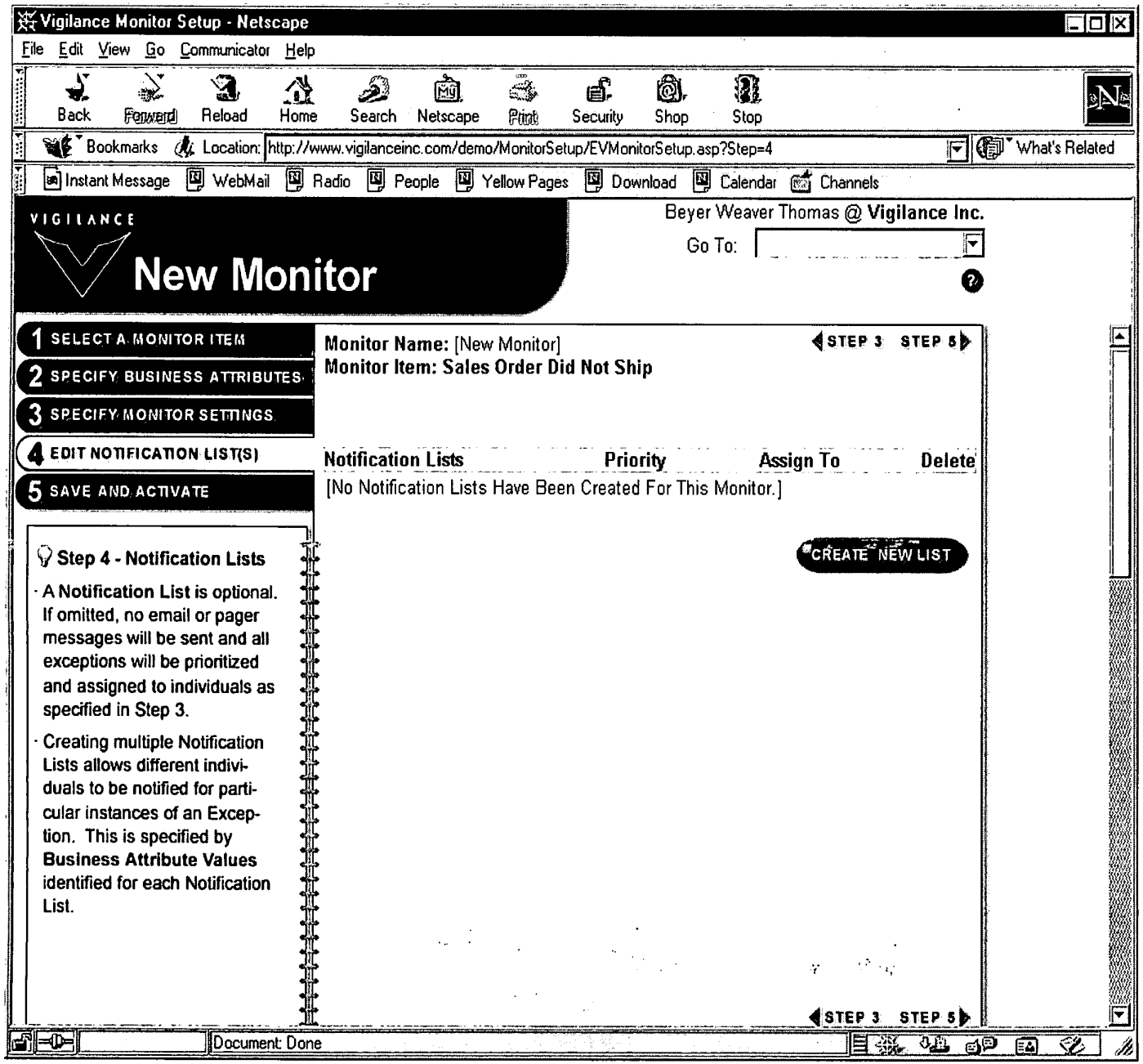


FIG. 23

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FEB 02 2004
JC42

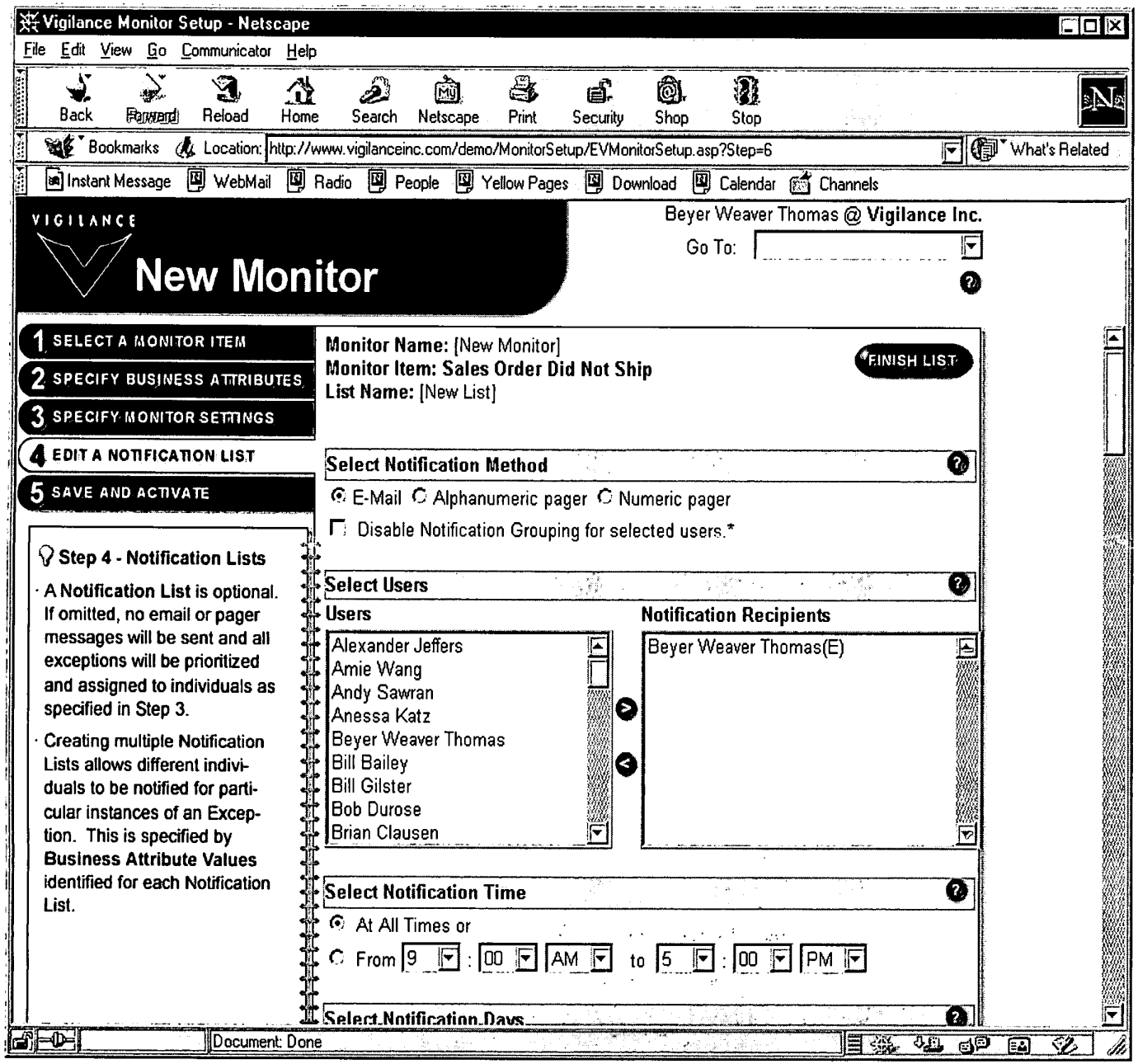


FIG. 24A

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OIPE

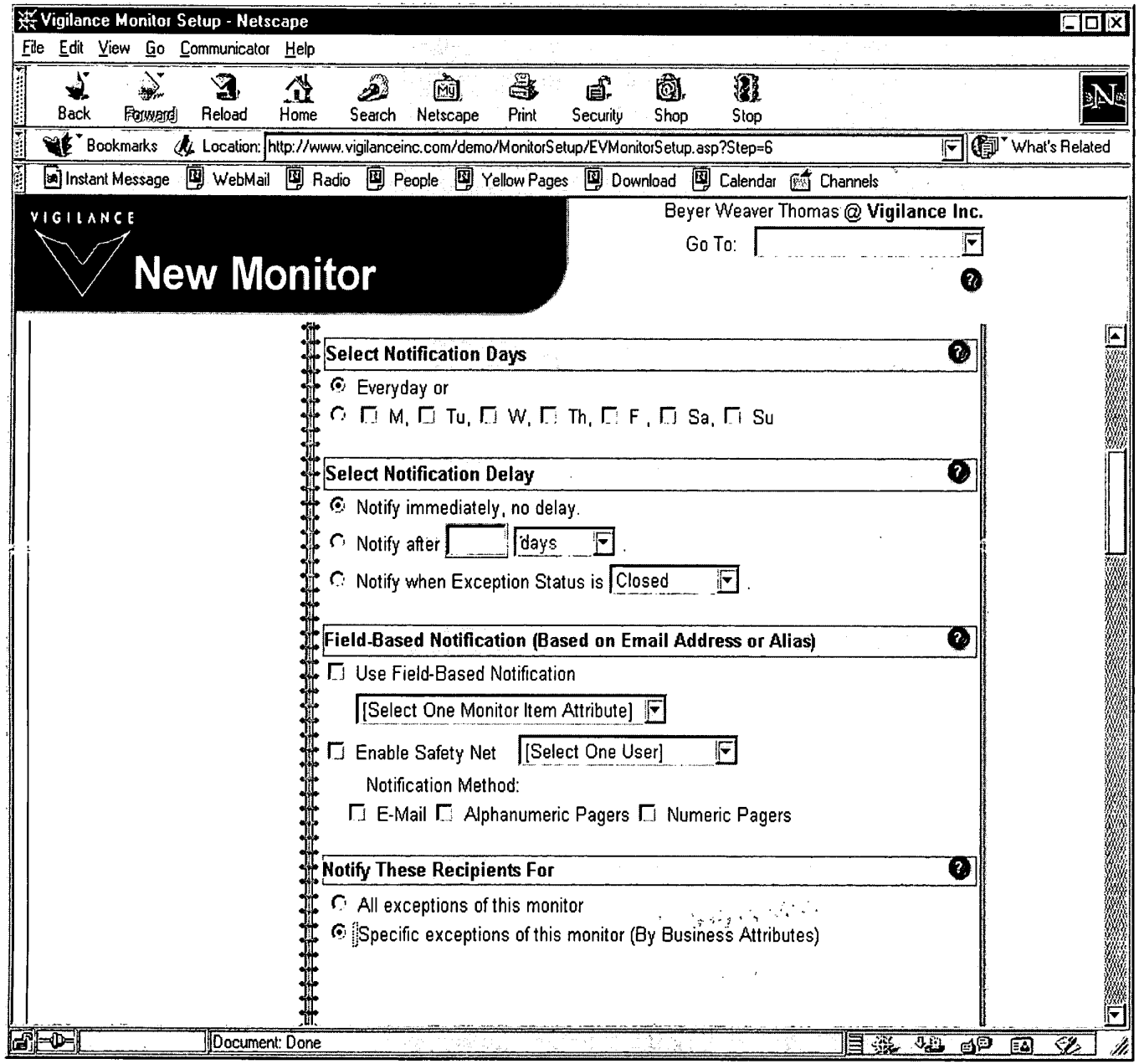


FIG. 24B

PATENT & TRADEMARK OFFICE
FEB 0 2 2004
JC42

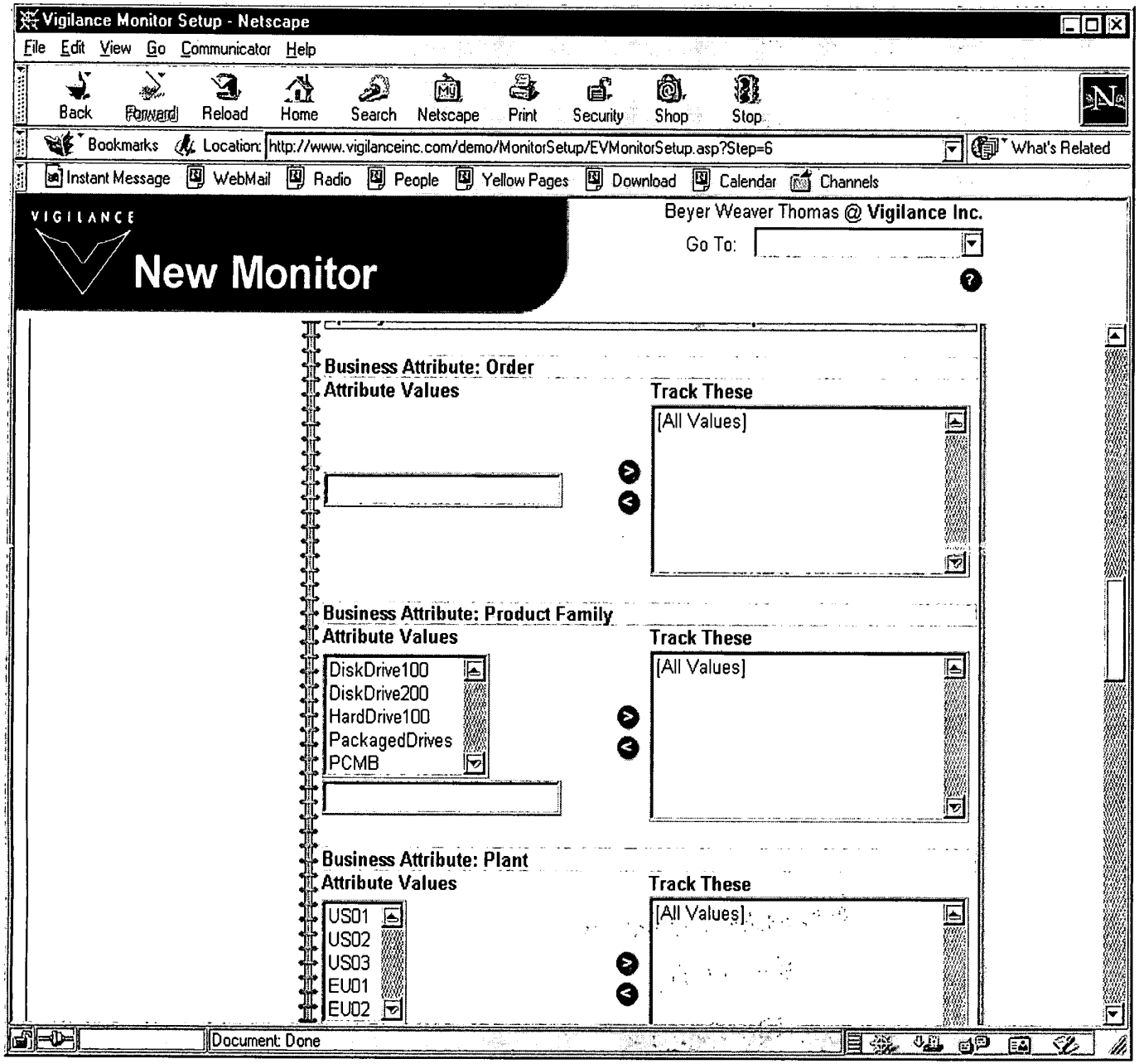


FIG. 24C

PATENT & TRADEMARK OFFICE
FEB 02 2004
JC42

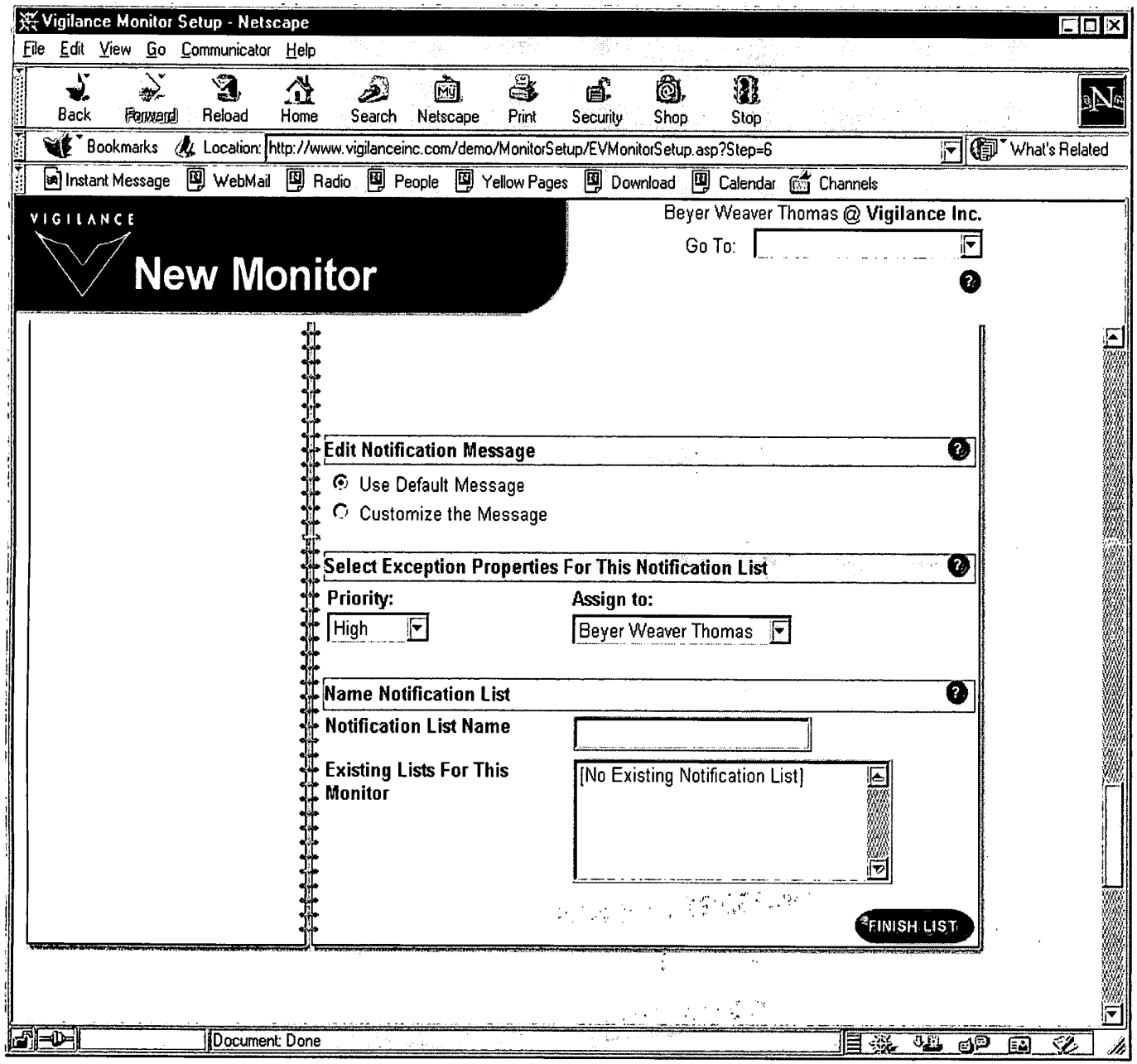


FIG. 24D

FEB 02 2004
TRADEMARK OFFICE

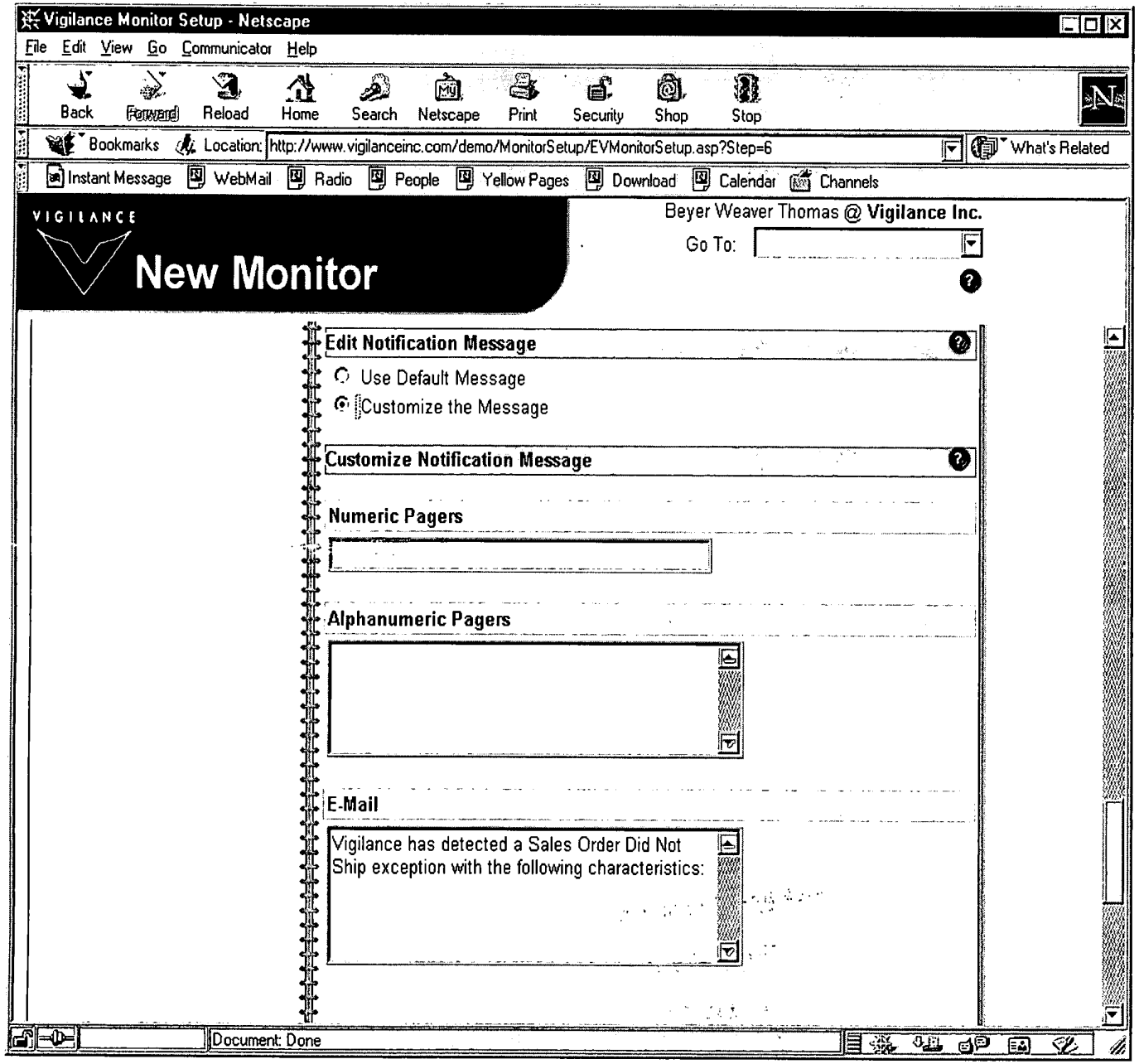


FIG. 24E

FEB 02 2004
PATENT & TRADEMARK OFFICE

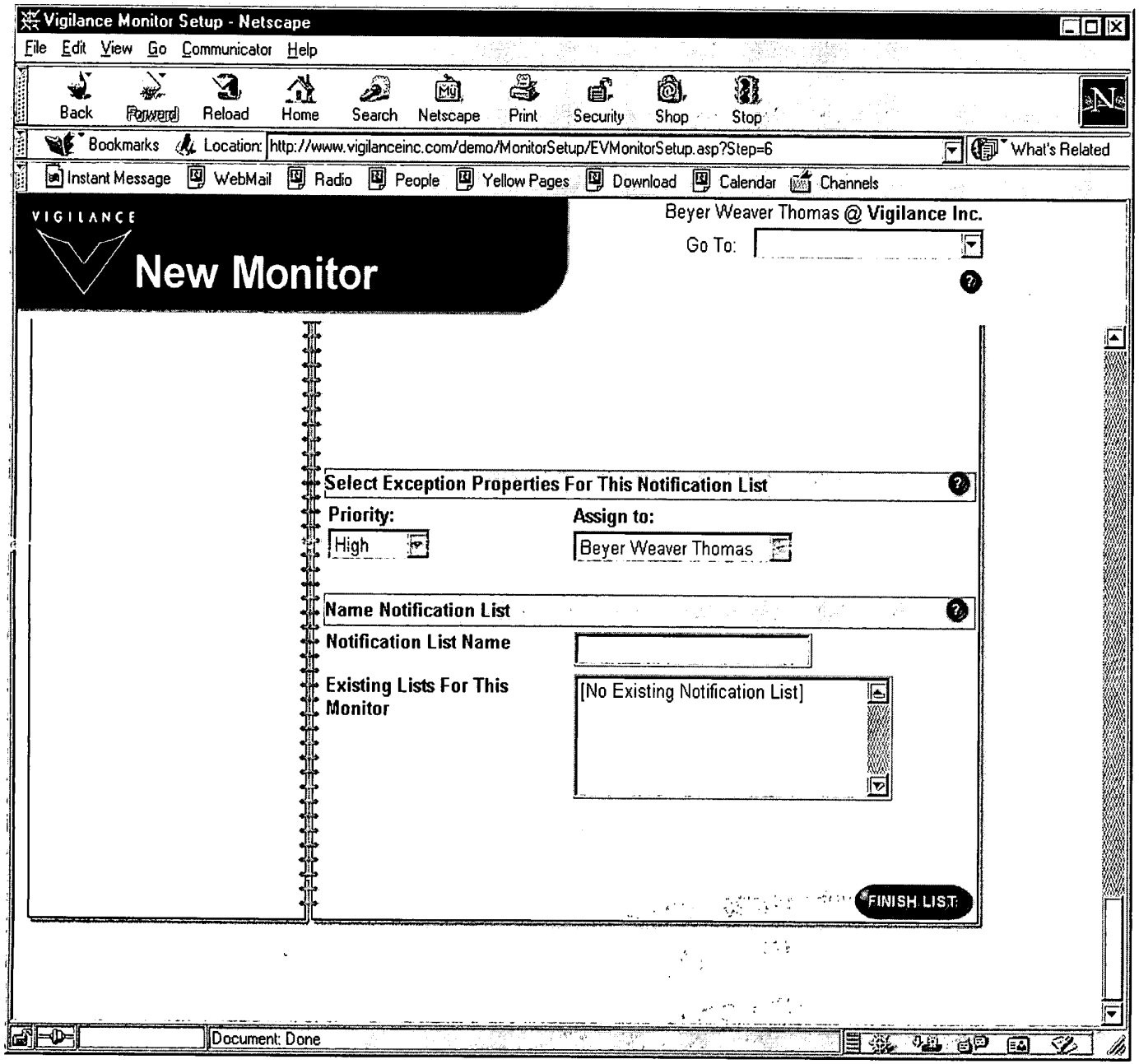


FIG. 24F

PATENT & TRADEMARK OFFICE
FEB 02 2004
O I P E

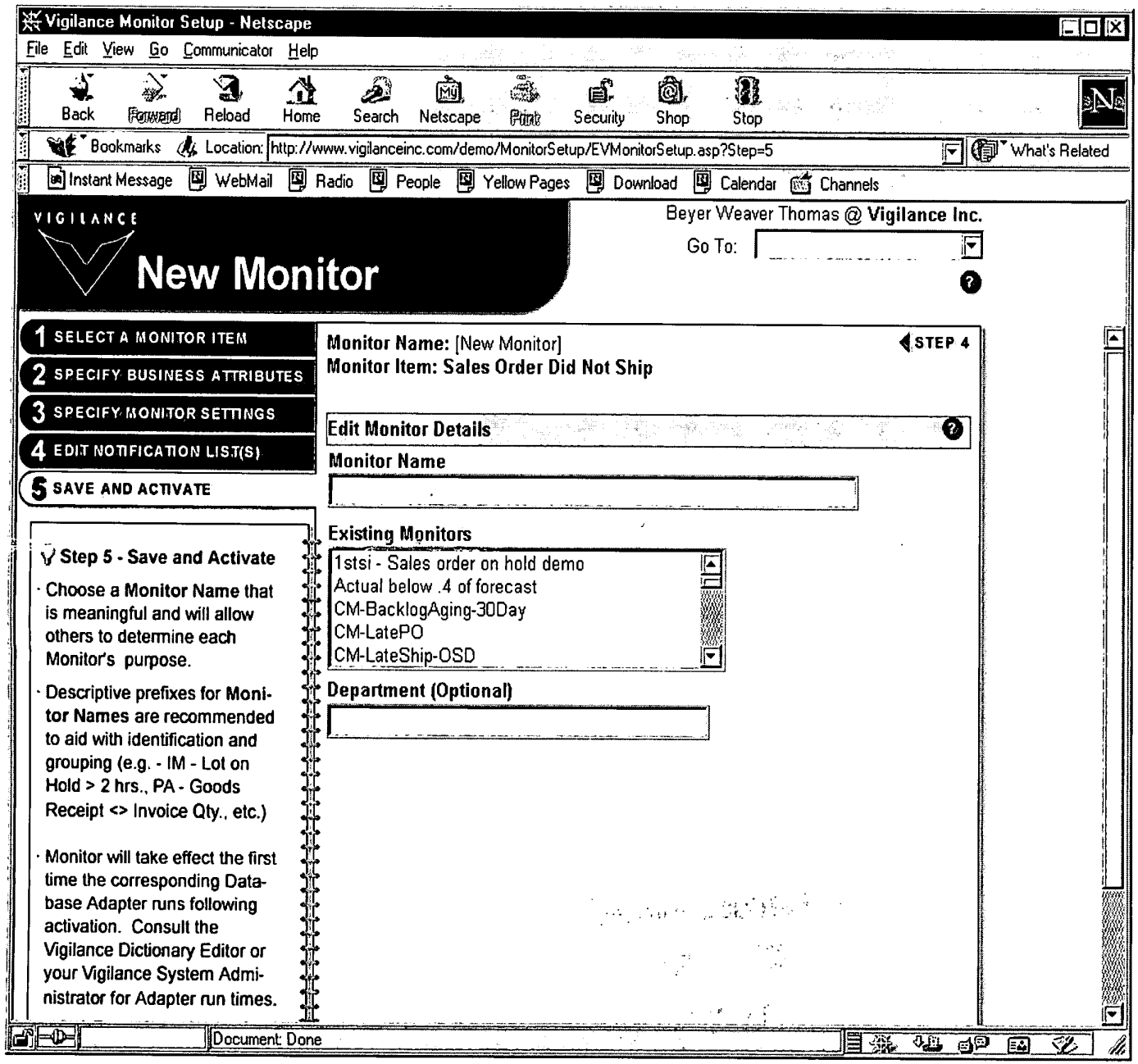


FIG. 25

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JC42
O I P E

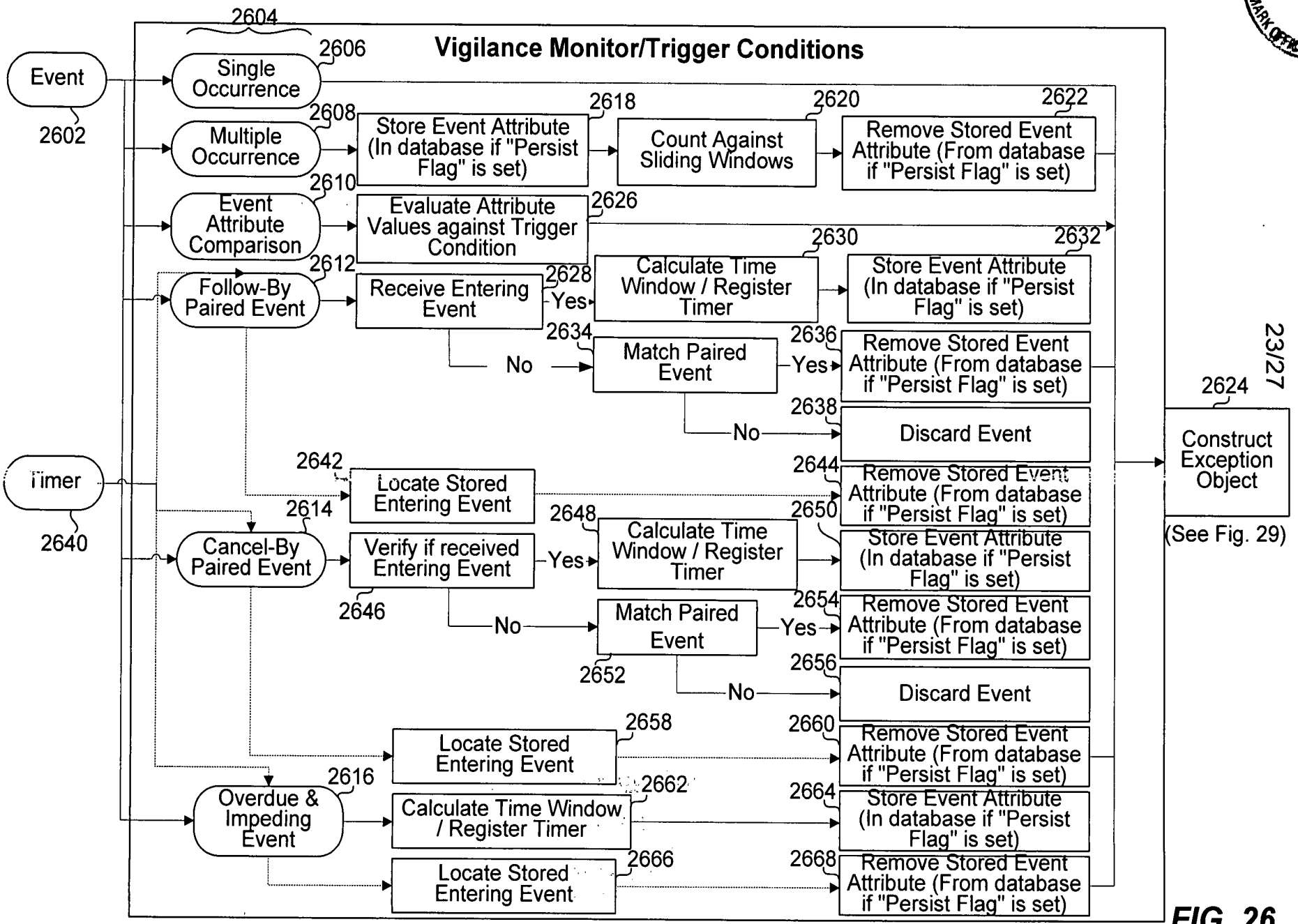




FIG. 26

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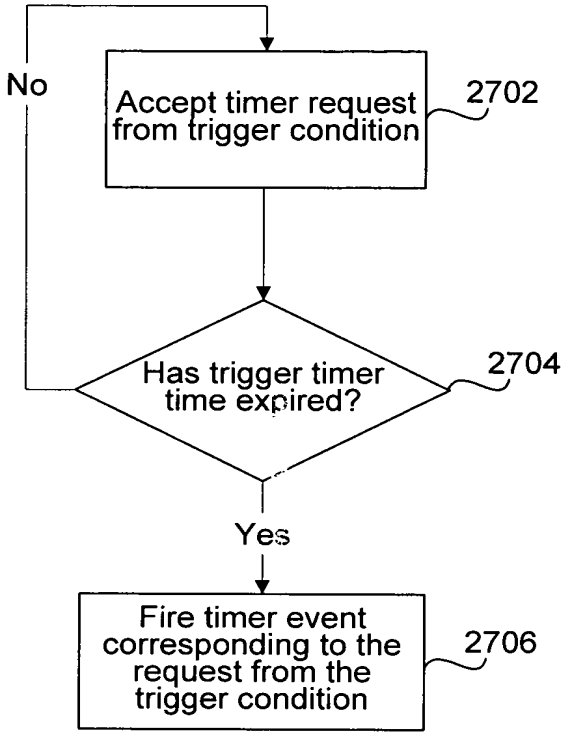


FIG. 27

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Monitor object

| |
|---|
| Monitor Name 2802 |
| Monitor Author 2804 |
| Condition 2806 |
| One or more attributes 2808 (e.g., including one or more values) |
| Notification 2810 |
| Assignment 2812 |

*FIG. 28*

Exception object

| | | |
|---|---|---|
| Exception identifier 2902 | Exception description 2904 | Event identifier 2906 |
| Trigger condition 2908 | Trigger type 2910 | One or more attributes (e.g., business metrics) 2912 |
| One or more attribute values 2914 | Monitor name 2916 | Monitor item 2918 |
| Notification/exception 2920 | Assign to 2922 | Priority 2924 |
| Detection time 2926 | Analysis 2928 | Analysis author 2930 |

*FIG. 29*

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FEB 02 2004
JC42
O I P E

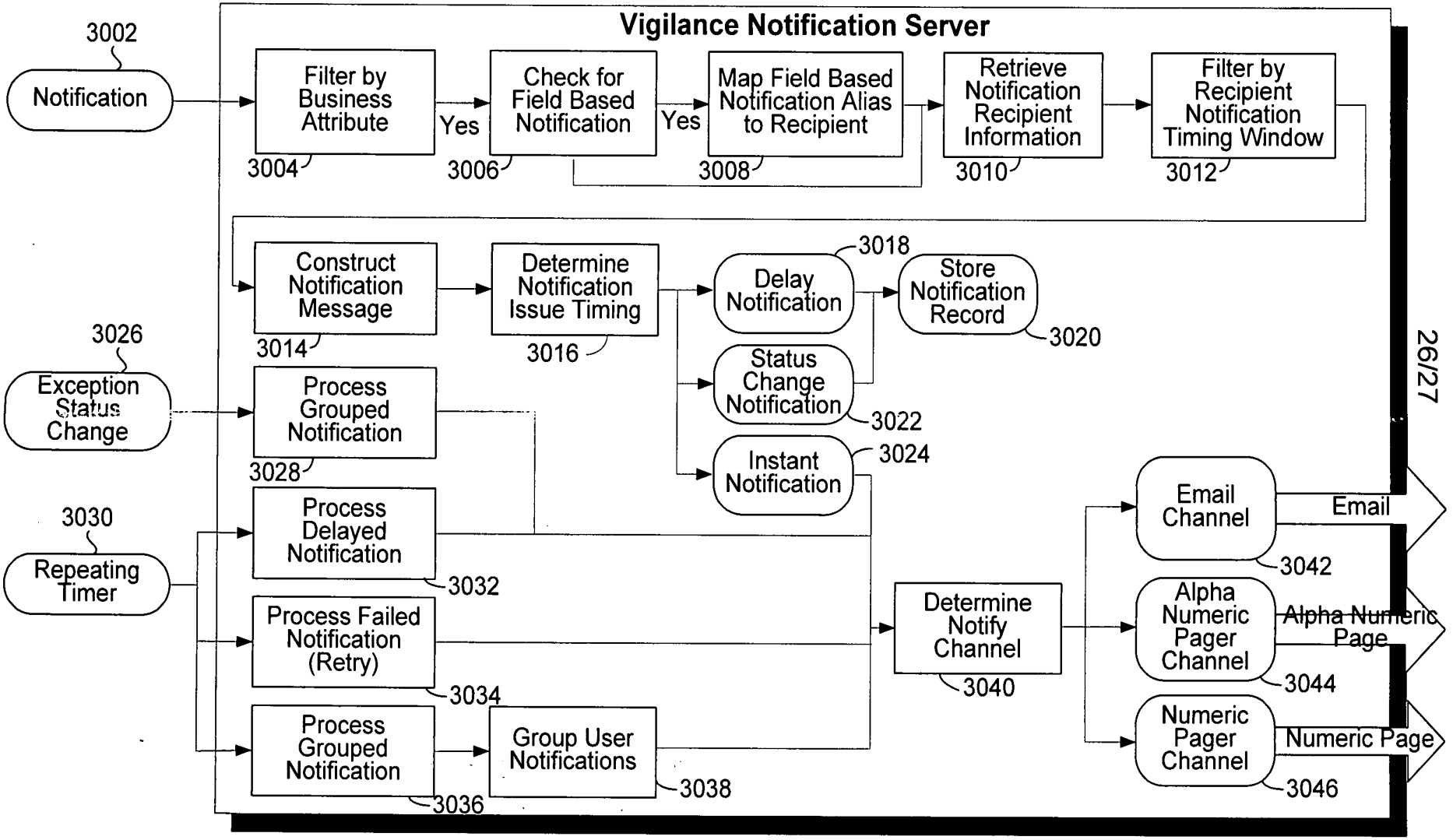


FIG. 30

OIPE
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JC42



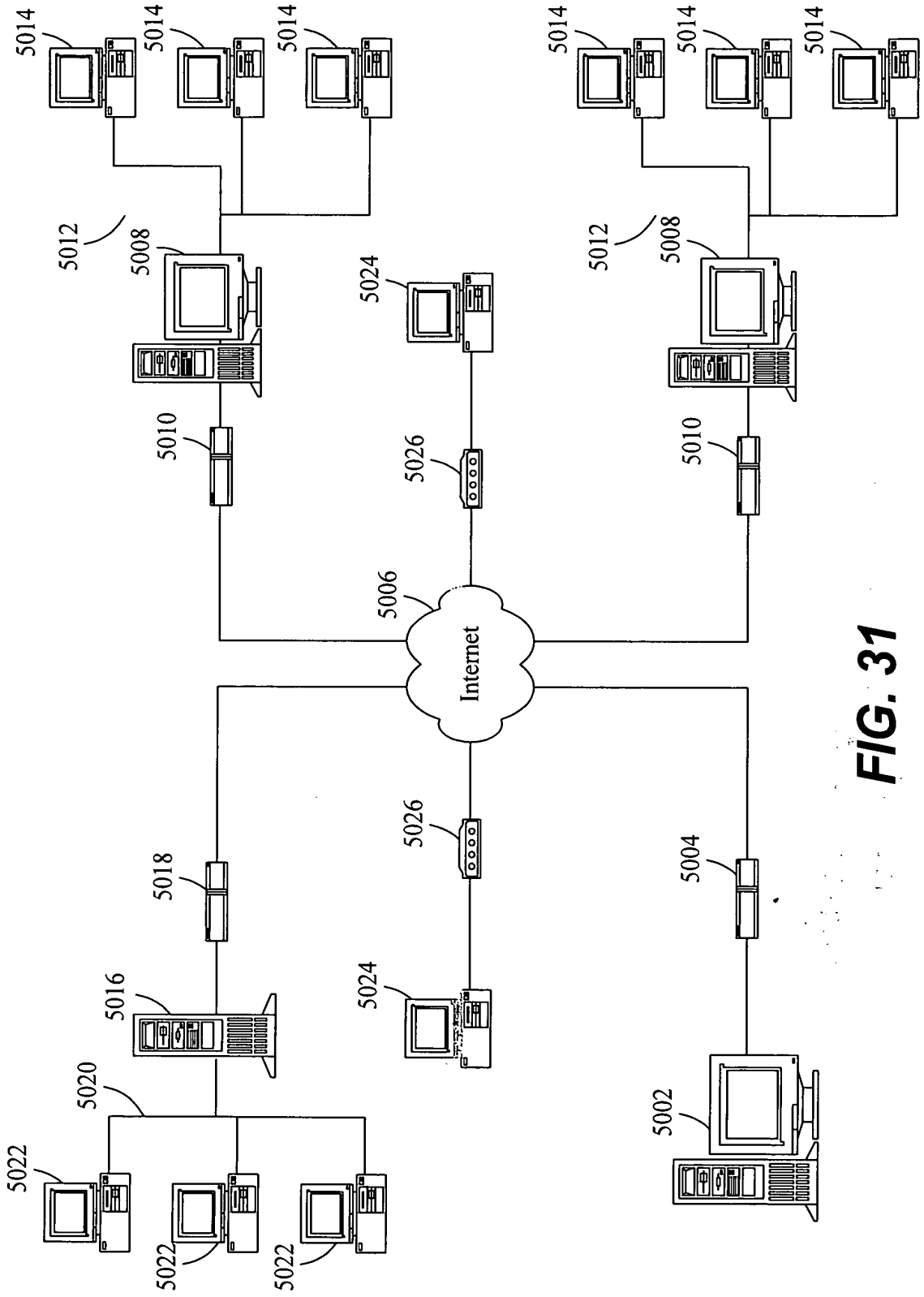


FIG. 31